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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10:016,173	12/13/2001	Kevin Barry Ray	KPG-5059US	1203

7590 06/27/2003

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EXAMINER

BARRECA, NICOLE M

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,173

Applicant(s)

RAY ET AL.

Examiner

Nicole M. Barreca

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. Claims 1-18 are pending in this application.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the mailing or post office address of each inventor (only a residence was provided). A mailing or post office address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing or post office address should include the ZIP Code designation. The mailing or post office address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Specification

3. The abstract of the disclosure is objected to because it is greater than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 11 are rejected over 35 U.S.C. 102(b) as being anticipated by Bennett (WO 96/20429), with Walls (EP 626273) cited to shown inherent properties.

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6. Bennett teaches a method for forming a lithographic plate. A photosensitive composition is coated on a base, overall exposed to UV light to render the composition developable (i.e. convert to indene carboxylic acid), imagewise exposed to an infrared laser (i.e. convert to indene) and then developed with an alkaline solution to remove the areas not exposed to the laser by developing (p.18). The photosensitive composition (applicant's second layer) comprises a naphthoquinone ester of a phenolic resin or naphthoquinone diazide ester and a phenolic resin (cl.5) and at least one substance which absorbs infrared radiation (photothermal conversion material, cl.6,7) (p.1). The preferred naphthoquinone diazide esters include o-naphthoquinone diazide carboxylic acid ester (p.2). The infrared absorbing compound may be carbon, a dye or pigment (cl.8) (p.4). Examples of suitable bases include anodized aluminum plates and plastics such as polyethylene terephthalate (polyester) (cl.2,3) (p.6). Thermal conduction from the photosensitive imaging layer (applicant's second layer) may be reduced by use of layers, such as those taught in EP 626273 (p.6). Walls (EP 626273) teaches using a barrier layer (corresponding to the applicant's first layer) between the support and the image forming layer in a lithographic printing plate. The barrier layer is composed of a copolymer of vinylphosphonic acid and acrylamide (copolymer having functional amide group, cl.4,11) (see abstract).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5, 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 4,544,627) in view of Shimazu (WO 01/46318), or Takahashi in view of Teng (US 6,387,595) and Shimazu.

9. Takahashi discloses a negative image forming process. A photosensitive material comprising an o-quinonediazide compound and a compound, such as a dye, which is able to convert the o-quinonediazide compound to the corresponding indene carboxylic acid compound when exposed to actinic radiation (applicant's photothermal conversion material). The photosensitive material (applicant's second layer) is coated on a base and the entire surface is uniformly exposed to convert the o-quinonediazide compound to the corresponding indene carboxylic acid compound. The material is then exposed by scanning a laser beam modulated by an image signal to render the indene carboxylic compound of the imagewise exposed areas converted to the corresponding indene compound. The plate is then developed with an alkaline solution to produce the negative working image (col.22, 1-col.23, 19). Examples of suitable bases include metal plates such as anodized aluminum and polymers such as polyethylene terephthalate (polyester) (cl.2,3) (col.3, 59-col.4, 26). A binder such as a phenol-formaldehyde resin may also be included in the photosensitive material (cl.5) (col.21, 44-56, examples 1 and 2). Examples 1 and 2 also teach forming the photosensitive material on the base at a thickness of 1.0 and 2.5 microns (cl.10) (col.24, 1-46). The photosensitive composition may also contain various additions to add color, such as

pigments and other resins and polymers in order to increase the image strength (cl.18) (col.21, 57-67).

Takahashi performs the imagewise exposure using a visible light laser and does not disclose imagewise exposing the photosensitive assembly with infrared radiation. While Takahashi discloses that visible light is preferred because IR lasers can be difficult to handle, it would have been obvious to one of ordinary skill in the art to perform the imagewise exposure using an IR laser, with the expectation that handling may be difficult. In addition, Teng teaches that lithographic printing plates are conventionally exposed to either visible light or infrared lasers because of their easy availability (col.7, 55-63). It would have been obvious to one of ordinary skill in the art to imagewise expose the photosensitive assembly in the method of Takashi using an infrared laser, instead of a visible light laser, because Teng teaches that it is conventional to use either visible light or infrared lasers because of their easy availability for imagewise exposure in the lithographic printing plate art.

Takahashi does not disclose a first layer between the hydrophilic support and the photosensitive layer that is soluble or dispersible in an aqueous alkaline solution, has at least one functional group selected from the group consisting of carboxylic acid, N-substituted cyclic imide, amide and mixtures thereof, and/or a terpolymer of methacrylamide, methacrylic acid and N-phenylmaleimide. Shimazu teaches a lithographic printing plate comprising a hydrophilic support, an underlayer over the hydrophilic support and a top layer over the underlayer. These printing plates are resistant to fountain solutions and aggressive blanket washes used in the patterning

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process, unlike conventional printing plates which apply the top radiation sensitive layer applied directly on the support, as a result of the presence of the underlayer (p.1, 24-p.2, 31). Preferably the underlayer is soluble in the aqueous alkaline developer.

Preferable polymeric materials for the underlayer include copolymers of N-phenylmaleimide (35-60 mol%), methacrylamide (15-40 mol%) and methacrylic acid (10-30 mol%) (cl.1,4,11,15,17). The polymeric materials in the underlayer comprise at least 65 wt% based on the total weight of the materials in the underlayer (cl.12). The underlayer may include a photothermal conversion material sensitive to infrared radiation, such as a dye or pigment, and is sufficient to provide an optical density from about 0.5 to 2 in the imaging wavelength (cl.13,16). The underlayer may also include other polymeric materials in order to improve the run length of the printing member (cl.16). Suitable developers include aqueous solutions having a pH from about 8 to about 13.5 (cl.14) (p.5, l.16-p.7, l.30, p.9, l.33-p.11, l.25, p.25, l.29-37). It would have been obvious to one of ordinary skill in the art to apply an underlayer of a copolymer of methacrylamide, methacrylic acid and N-phenylmaleimide between the support and the photosensitive layer in the method of Takashi because Shimazu teaches that this will make the printing plate more resistant to the fountain solution and blanket washes used during the printing plate processing.

10. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett, with Walls cited to show inherent properties.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Teng or Takahashi in view of Teng and Shimazu.

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12. Bennett is silent on the thickness of the first and second layers and does not disclose that the first and second layer have a thickness from about 0.5 to about 2.5 microns. Takashi in view of Teng and Takahashi in view of Teng and Shimazu are silent on the thickness of the first layer and do not disclose that the first layer has a thickness from about 0.5 to about 2.5 microns. The thickness of individual layers are known in the photolithographic art to be result effective variables which are dependent the process conditions, including the specific compositions of such layers, imaging radiation wavelengths, exposure time, developing solutions and times. It would be within the ordinary skill of one in the art to determine the optimal thickness for the first and/or second layers in the methods Bennett, Takashi in view of Teng or Takahashi in view of Teng and Shimazu by routine experimentation and to have the thickness be about 0.5 to 2.5 microns, if required, because the discovery of an optimum value of a result effective variable is ordinary within the skill of the art, as taught by *In re Boesch* (617 F.2d 272, 205 USPQ 215 (CCPA 1980)).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shinozaki (US 5,631,119) discloses a method for patterning printing plates using a photosensitive top layer comprising an o-quinonediazide sulfonic ester.

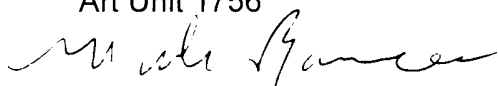
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M. Barreca whose telephone number is 703-308-7968. The examiner can normally be reached on Monday-Thursday (8:00 am-6:30 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Nicole Barreca
Patent Examiner
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A handwritten signature in cursive script, appearing to read "Nicole Barreca", written in dark ink.

June 25, 2003